

REMARKS / ARGUMENTS

Claims 1 and 3-12 remain pending in this application. Claim 2 has been canceled without prejudice or disclaimer. Claims 13-16 have been withdrawn.

Priority

Applicants appreciate the Examiner's acknowledgment of the claim for priority and safe receipt of the priority document.

35 U.S.C. §112 and Claim Objections

Claim 7 has been amended to overcome the Examiner's objection.

Claims 8, 9 and 11 have been amended to overcome the Examiner's objection under this section

35 U.S.C. §§102 and 103

Claims 1-2, 4-6 and 8-10 stand rejected under 35 U.S.C. §102(e) as being anticipated by Carey et al (U.S. Patent No. 2003/0022023). Claim 7 stands rejected under 35 U.S.C. §102(e) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over Carey et al. Claim 3 stands rejected under 35

U.S.C. §103(a) as being unpatentable over Carey et al in view of Girt et al (U.S. Patent No. 6,645,614). These rejections are traversed as follows.

The present invention is directed to a perpendicular magnetic recording medium having a perpendicular recording layer on a substrate via a soft magnetic underlayer. The soft magnetic underlayer includes a ferromagnetic layer formed on an antiferromagnetic layer and a first amorphous soft magnetic layer formed on the ferromagnetic layer. As shown in Fig. 18, ferromagnetic layer 185 is formed directly on antiferromagnetic layer 184. Furthermore, a first amorphous soft magnetic layer 186 is formed directly on ferromagnetic layer 185. This way, the soft magnetic layer 186 can sufficiently accept the exchange bias field from the antiferromagnetic magnetic layer 184 through ferromagnetic layer 185. As such, a quasi-single domain can be held in the first amorphous soft magnetic layer 186 such that a perpendicular magnetic recording medium can be realized in which spike noise and modulation of output signal are suppressed (see page 6, line 23 to page 7, line 4 and page 20, lines 5-11).

None of the cited references disclose this feature of the presently claimed invention. For example, Carey et al disclose an order of layers including an antiferromagnetic layer 40, a ferromagnetic layer 11, an Ru spacer layer 21, and a ferromagnetic layer 12 in that order (see Fig. 2). On the other hand, according to the present invention, the first amorphous soft magnetic layer 186 is formed directly on

ferromagnetic layer 185 without the spacer layer as in Carey et al. As such, the present invention can be distinguished from the disclosure of Carey et al.

The deficiencies in Carey et al are not overcome by resort to Girt et al. Girt et al was merely cited to disclose ferromagnetic interface layers provided between a non-magnetic coupling layer and antiferromagnetically coupled magnetic layers for thermal stability. As such, it is submitted that the pending claims patentably define the present invention over the cited art.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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